NOTES ON A CASE OF BACKWARD DISLOCATION OF THE HEAD OF THE HUMERUS CAUSED BY MUSCULAR ACTION.

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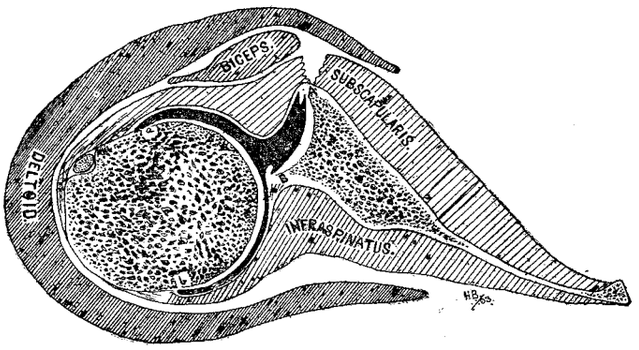
BACKWARD dislocation of the head of the humerus is rare, but backward dislocation produced by muscular action alone is, so far as I (C. W. M. M.) know, unique. The patient who met with this injury was a rather stoutly built but muscular man of about middle age, who was playing tennis. Trying to take a ball breast high with a back-handed stroke he missed his aim and instantly his arm dropped by his side, useless, and he was seized with violent pain in the shoulder. Dr. C. Gould May of Cadogan-place, who was immediately sent for, diagnosed a backward dislocation of the head of the humerus and called me in There was no doubt as to the nature of the injury. The patient was sitting in the characteristic attitude nursing his elbow, which was flexed and pointing slightly forwards. The whole shoulder seen from the outer side had a peculiarly squared appearance. The arm was a little abducted and rotated inwards; there was a great hollow under the deltoid in front, so that the anterior portion of the glenoid fossa could be felt through the muscle, and there was a corresponding prominence behind. Active movement was impossible and any attempt at passive motion caused great pain. The patient was placed under an anæsthetic and as soon as the muscles were relaxed the arm was slightly abducted, drawn downwards, and rotated outwards. The head of the bone slipped in at once and there was no further trouble, the patient regaining perfect use of the arm in the course of a few weeks.

The mode in which this peculiar injury was caused is a matter of some interest. The head of the bone was caught behind the posterior lip of the glenoid fossa and held there. Probably the capsule was not torn or, at least, was not torn sufficiently to allow the head of the bone to protrude through it—an occurrence which, though not common, is not unknown in connexion with ordinary dislocation of the shoulder. The rapidity and the completeness of the recovery certainly favour this. The subscapularis was tensely stretched across the glenoid fossa and as soon as the head of the bone was dislodged by external rotation, combined with abduction and traction downwards, dragged it suddenly back into its place. The patient did not fall down or strike his hand or his elbow against anything, so that the displacement of the head of the humerus could not have been caused by leverage in the ordinary sense of the term. Nor can it be explained by sudden arrest of the momentum of the arm, for this would have carried the head of the bone forwards. The only explanation that appears to me to be feasible is that in the sudden knowledge that he had missed or was going to miss the ball, and perhaps in some way in an attempt to save the stroke, conflicting orders were sent down from the nervous system the co-ordination of the muscles around the shoulder-joint, upon which its security depends, was improperly carried out, and the head of the bone was simply dragged directly backwards over the lip of the glenoid fossa by the violent and unopposed contraction of the short external rotators I am greatly indebted to Dr. Keith for having worked out so thoroughly the anatomy of this dislocation, and to Dr. H. Balean for the excellent illustration that he has made from Dr Keith's preparation.

Anatomy of the Parts concerned in Subspinous Dislocation of the Shoulder, by Dr. KEITH.

At the commencement of a back-handed stroke the humerus is rotated inwards, so that the anterior margin of the humeral head is in contact with the anterior margin of the glenoid cavity (see the points *a* and A in Dr. Balean's drawing). The subscapularis is then fully contracted and the anterior part of the capsule is thrown into a fold beneath the insertion of that muscle. The infraspinatus and teres minor are then relaxed but the posterior part of the capsule, which lies beneath their insertions, is taut and covers nearly two-thirds of the head of the humerus. In the rotation outwards which occurs in a back-handed stroke the posterior margin of the head of the humerus comes rapidly in contact with the posterior margin of the glenoid cavity (see the points *b* and B in Dr Balean's drawing). During this movement the posterior part of the capsule, under the insertions



Section through left shoulder-joint, looking towards hand.

of the infraspinatus and teres minor, is thrown into a fold, while the anterior part becomes taut over the anterior two-thirds of the articular head of the humerus. In the specimen from which Dr. Balean's drawing is made the subscapularis was cut across (i.e., thrown out of action), the infraspinatus and teres minor were kept on the stretch, and the arm was then rapidly rotated outwards. In this movement the head of the humerus, acting on the glenoid ligament (B in illustration) as a fulcrum, moved outwards and occupied the fold formed by the posterior part of the capsule, assuming a position similar to that seen in Mr. Mansell Moullin's case. The glenoid ligament is the representative in the shoulder of the semilunar cartilages in the knee and there seems to me to be a similarity between this form of dislocation of the shoulder and that of a semilunar cartilage of the knee. Because the knee ligaments are so strong it is the cartilage which is dislocated; in the shoulder, where the ligaments are so lax, it is the bone that is displaced.

70 CASES OF LOBAR PNEUMONIA:

AN ANALYSIS OF THE CLINICAL FEATURES AND POST-MORTEM CHANGES.

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FROM January 1st, 1902, to March, 1903, inclusive we had at Kensington infirmary upwards of 70 cases of pneumonia with 29 post-mortem examinations. Many of the patients being older than the average hospital patient we think that it may be of some interest to publish a brief summary of these cases, of which we kept notes. With the exception of three or four cases that recovered in January, 1902, they include every case occurring in Kensington workhouse and infirmary during 15 months.

As to seasonal prevalence March to June were the chief months. There was no case in July but August, which was unusually cold, gave us five cases and October seven cases. The patients were chiefly males. 32 males and six females recovered and 21 males and 11 females died.

With regard to the portion of the lungs affected, in 37 cases that recovered and three cases that died without post-mortem examinations the physical signs pointed to the